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ABSTRACT

Student development is seen as a set of variables that can be used by a college to assess its social contribution to the region, state, or community in which it resides. In doing so, it is important to consider student characteristics upon admission. A total of 1,927 student records from three colleges and universities were combined to study college outcomes in the context of admissions variables. College outcomes in the career areas were studied, including curricular major and letter occupation. It was found that students generally implemented their plans at college entrance, suggesting that college helps students achieve their career goals. Income was also examined. College students expect to earn over $6,000 more per year than their parents. A third outcome area studied was educational behavior. Most college students earn a baccalaureate, and college plans at admission are related to persistence. While student educational plans at admission are potent predictors of what the student will do in college, the college experience itself is seen as reinforcing the importance of education and raising educational aspirations. (Author/LBH)

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ACT RESEARCH REPORT

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EDUCATION

No. 75

TOWARD A SOCIAL AUDIT OF COLLEGES: AN EXAMINATION OF COLLEGE STUDENT OUTCOMES IN TERMS OF ADMISSIONS INFORMATION

Lyn A. Mindlin

TOWARD A SOCIAL AUDIT OF COLLEGES: AN EXAMINATION OF COLLEGE STUDENT OUTCOMES IN TERMS OF ADMISSIONS INFORMATION

ABSTRACT

Student development is seen as a set of variables that can be used by a college to assess its social contribution to the region, state, or community in which it resides. In doing so, it is important to take account of student characteristics upon admission. A study was completed to provide an illustration. Student records from three colleges and universities were combined to study college outcomes in the context of admissions variables. A total of 1,927 student records were complete with admissions and alumni information. College outcomes in the career area were studied, and these included curricular major upon leaving college and occupation after college. It was found that students generally implemented their plans at college entrance, and in this sense college could be seen as helping students achieve their career goals. A second outcome of interest was income. College students expect to earn over $6,000 more per year than their parents. Although students from high income backgrounds themselves expect high future incomes, students just entering work from college all have about the same income. We conclude that college appears to increase the expected earnings of its students. A third outcome area studied was educational behavior. Most college students earn a baccalaureate, and college plans at admission are related to persistence. While student educational plans at admission are potent predictors of what the student will do in college, the college experience itself is seen as reinforcing the importance of education and raising educational aspirations.

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TOWARD A SOCIAL AUDIT OF COLLEGES: AN EXAMINATION OF COLLEGE STUDENT OUTCOMES IN TERMS OF ADMISSIONS INFORMATION

Leo A. Munday[1]

Some industrial firms, both in this country and abroad, are using the concept of "social audits" to describe corporate activities designed to meet their social responsibilities. Besides making money for its stockholders, a corporation has responsibilities to its employees, its clients, and the general public. The performance of the corporation in meeting each can be quantified, often in dollar terms. For example, everyone knows corporations exist to make money. In calculating the net contribution of a corporation to society, however, deductions should be made for possible bad corporate performance with respect to employees, such as layoffs or an ineffective affirmative action program; to clients, such as by providing inferior products or making late deliveries; and to the general public, such as by polluting the environment or maintaining an unsightly physical plant. Since social performance can be quantified in dollar terms, it can be treated as part of the financial statement in a corporation annual report. The Annual Report and Social Audit 1973 of Abt Associates, Inc. shows how one corporation has done just this. Hunt (1974) describes how one firm, General Mills, went about developing a social audit.

To educators, all this has a familiar ring. Corporations, like colleges and universities, are called upon to be accountable, to be responsible for their actions, including those potentially undesirable side effects that are consequences of their normal activities. In a skeptical social environment, all kinds of institutions, including colleges and universities, are being called upon to account for their activities, in a word, to conduct something like a social audit of themselves.

It is true that the college payroll contributes to the economic well-being of a region, just as college drama, symphonies, athletic events, and lectures contribute to its cultural quality and provide entertainment. Equitable and competitive salary schedules help meet a college's responsibilities to its faculty and other employees. Books and articles published by faculty are part of a college's contributions to the general public.

Yet the central purpose of a college is related to its students, and what happens to them as a result of their college experience. To the practical-minded public, this means, rather simply, that college prepares people for careers, leads to better incomes, and generally encourages the development of students. Although documentation of these purposes would best be developed on a college-by-college basis, this paper is designed to illustrate how colleges might generally perform an audit, and to provide some benchmark data suggestive of results colleges might expect.

Because student outcomes are related to student input, studies of student development invariably must take account of student characteristics at admission. This generalization is commonplace in college impact studies. Various approaches have been used by investigators, including examination of incremental student change, a sort of "value added" by the college experience.

Our approach is to emphasize that college students are purposive. And yet, although students

[1]The author wishes to express gratitude to many people who helped with this study. Jeanne C. Davis helped with the design and administration of the survey. Gary Hanson, Maureen Olson, and Charles Yang managed the data processing. Patricia Gartland made numerous useful editorial suggestions to a preliminary version of the manuscript. Thanks are also due to the universities and their former students who cooperated with the study.

may plan to major in certain fields or to graduate from college, for example, student background characteristics can affect the accomplishment of these goals. Consequently, an array of student data typical of that collected at college admission will be related to the various student outcomes. For these two examples, our interest would be in the percentage of students who implemented their plan (majored in the field they intended and graduated from college as planned), on the assumption that an important role of college is to help students accomplish the purposes with which they enter college. Students may change their plans as a result of college, of course, and our reaction to such changes might depend upon the variable and the direction of change. We would be pleased if significantly more students graduated from college than planned, and displeased with the converse, for example.

Method

Sample

Records for students who enrolled in the fall of 1965 in three universities, one in the Midwest and two in the South, were included in the study. One of the southern institutions enrolled predominantly white students, the other predominantly black. Most of the students in the study took the ACT Assessment during 1964-65, as high school seniors. Admissions information for the students was taken from the appropriate ACT records.

During the 1970-71 academic year, when students who had earned a bachelor's degree in the usual 4 years would have been in the second year after college graduation, an Alumni Survey was conducted. The survey, which included items about career and educational behavior, is discussed in the section "College Outcome Variables." The sample, response rates, and a comparison on admissions variables of responders and freshmen enrolled in 1965, are reported elsewhere (Munday & Davis, 1974). For the three institutions, the survey response rates were 42%, 56%, and 19%. The first two figures are comparable to response rates for college follow-up surveys in which there is an interval of several years between collection of initial and of subsequent information. The reason for the comparatively poor response rate at the third university is not known. The total number of surveys for which results could be collated with admissions variables was 1,927. Because some surveys were incomplete, analyses were conducted on the maximum number of surveys available for each item of information.

Admissions Variables

Admissions variables for entering students came from the ACT record for 1964-65. The technical characteristics of these variables are reported in the *ACT Technical Report* (1972).

Three kinds of measures of talent were employed: ACT Composite scores, High School Average, and the six nonacademic accomplishment scale scores. The ACT Composite is the average of the four test scores reported in English, mathematics, social studies, and natural sciences. High School Average is the average of the four student-reported high school grades in the same subject matter areas. The six nonacademic accomplishment scales report high school out-of-class achievement in leadership, music, speech, art, writing, and science.

Four factors considered in choosing a college were included. These factors, intellectual emphasis, practicality, advice of others, and social emphasis, were based on scales derived from Richards and Holland's (1965) factor analysis of student explanations (as taken from the 1964-65 ACT Assessment) of their choice of a college.

Two items of demographic information, family income and level of educational aspiration, were included. Students were asked to estimate their family income before taxes. Those who did not wish to respond marked "confidential" and those who did not have the information marked "don't know." About 30% of ACT-tested students generally mark this item "confidential" or "don't know." Choices for level of educational aspiration, which referred to highest degree sought, ranged from a high school diploma to the various doctoral and professional degrees.

Two items related to careers, vocational choice and intended curricular major in college, were included. Both were classified according to the system devised by Holland and his colleagues (1969) for classifying occupations and college majors on the basis of vocational interests. Chart 1

contains sample college majors and occupations in Holland's six categories. In the analyses which follow, attention is focused on student progress within the same or related field, an approach more reasonable than analysis by identical fields. A student who moved from an accounting to a business major, for example, would remain in the same classification, but one who moved from an accounting to a music major would not.

College Outcome Variables

Information on the college outcome variables was collected through the Alumni Survey, which was sent to members of the study group approximately 2 years after college graduation for those who graduated in 4 years, and 6 years after the admissions information was collected.

Two items of career behavior, curricular major in which the student graduated (or was studying when he or she left college) and occupation the student entered after college, were included. The latter analysis excluded students who reported they were not employed, were housewives, were in non-career armed service, or were in graduate or professional school or undergraduate school.

Three items of demographic information, annual income, annual income anticipated in 10 years, and educational aspiration after college, were included. Students who responded to the "annual income" item as housewives or holders of scholarships or assistantships were excluded from analysis. On both income items, respondents were asked to disregard spouse's income and to indicate income before taxes. The educational aspiration item, like the admissions variable, referred to highest degree sought.

Three items of educational behavior were included: level of education attained at the time of survey (including less than a baccalaureate), educational activity or coursework underway at that time, and overall college grade point average at graduation or leaving college. Level of education attained was used to define persistence, and as such meant earning a baccalaureate within 5 years following admission at the college entered as a freshman.

CHART 1

Illustrative College Majors and Occupations in Holland's Six Categories

Realistic

- Architecture
- Agriculture
- Engineer
- Industrial Arts Teacher

Investigative

- Biology
- Chemistry
- Mathematics/Statistics
- Medicine
- Physics
- Science Teacher

Artistic

- Art
- Music
- Actor/Actress
- Speech/Drama/English Teacher
- Journalist

Social

- Psychology
- Sociology
- Teacher
- Nurse
- Librarian
- Clergyman

Enterprising

- Economics
- Law
- Political Sciences
- Manager/Administrator
- Salesman
- Government Officer

Conventional

- Accounting
- Data Processing
- Finance
- Business Teacher

Results and Discussion

Curricular Major upon Leaving College

The relationship between curricular major at admissions and curricular major at college graduation (or leaving college) is reported in cross-tabular form in the middle section of Table 1. Both sexes were included. Most students (62%) left college with the curricular major they selected initially or with a related major. This is consistent with research reported by Holland and Whitney (1968) and Carmody, Fenske, and Scott (1972). Both these studies of college students, the latter a 2- and 4-year follow up, employed Holland's classification of occupations and majors. Although the perception of student advisors that major changing is frequent may be true, students generally change to a related field. Curricular majors would seem to reflect vocational interests; the consistency found in the present study attests to the stability of vocational interests through late adolescence and early adulthood.

Though not reported in Table 1, separate analyses were run for men and women. Sixty percent of men and 65% of women left college in the majors they indicated on admission or in related majors. The chief difference between the sexes was that large numbers of women entered majors in the Social area, which includes education, nursing, other health fields, social work, secretarial work, and related fields. Forty-nine percent of the women, but only 6% of the men, majored as freshmen in the Social fields. Fifty-six percent of the women left college in Social majors, compared with 11% of the men. Among women classified at admission in the contiguous areas of Artistic and Enterprising, there was a decided tendency to switch to Social majors before leaving college.

Occupation upon Leaving College

The relationship between vocational choice at admissions and occupation upon college graduation (or leaving college) is reported in the upper section of Table 1. Fifty-seven percent of the students went into an occupation related to their vocational choice at time of admission. Vocational choice at college entrance appears to be an important indicator of career intention.

Though not reported in Table 1, analyses by sex showed that 52% of the men and 64% of the women entered occupations consistent with their vocational choices. In accordance with the findings on majors, women most frequently selected Social fields as vocational choices and entered Social occupations. Those women who made vocational choice changes most often switched to Social fields, notably from contiguous Artistic fields.

The relationship between occupation upon leaving college and college major at graduation or leaving is reported in the bottom portion of Table 1. Seventy-seven percent of the students entered an occupation related to curricular major upon leaving college. Sex differences, not reported in Table 1, were small overall: 79% for men and 75% for women. It would appear that for college students generally, a college education serves an important career function, in that curricular major serves as preparation for entering an occupation.

Income after College

Two aspects of income were studied: income in the second year after college and income anticipated in 10 years. The admissions item most likely to be related to student income is family (or parents') income. Cross tabulations showing family income at time of admission compared to income after college and anticipated income are reported in Table 2. The modal income after college was in the $5,000-7,499 interval, regardless of the person's family income. An interesting sidelight is the four respondents who earned $25,000 or over right after college; all four came from families with incomes of $25,000 and over.

The relation between family income and anticipated income is shown at the bottom of Table 2. The modal anticipated income within 10 years was $10,000-14,999 for students from lower and medium family income levels; it increased to $25,000 and over for students from families with incomes of $20,000 and up. It appears that students from high income families expect high incomes.

Income immediately after college is not a good indication of earning power because at that time, a person is not yet established in a career. Income anticipated in 10 years is also a less than perfect indicator, because fantasy or unreality factors may influence projection of the figure. However, anticipated income is probably a better index of future earnings than income right after college. In this context, figures in Table 2 for anticipated

TABLE 1

Relationships among Vocational Choice and Curricular Major at College Admissions vs. Occupation upon Leaving College and Curricular Major upon Leaving College

(Reported in Percents, Rows Total to Approximately 100)

Vocational Choice at College Admissions		Occupation upon Leaving College							
		1	2	3	4	5	6	PC	N
Investigative	1	50	5	19	14	11	1	100	474
Artistic	2	9	33	30	16	12	1	101	101
Social	3	5	4	78	5	8	0	100	367
Enterprising	4	11	4	19	44	18	5	101	133
Conventional	5	6	5	6	21	62	0	100	63
Realistic	6	0	20	0	20	20	40	100	5

N = 1,[illegible]3 Hit Rate is 57%

Curricular Major at Admissions		Curricular Major upon Leaving College							
		1	2	3	4	5	6	PC	N
Investigative	1	61	7	14	9	9	1	101	750
Artistic	2	9	54	28	8	3	0	102	200
Social	3	7	11	77	3	2	0	100	459
Enterprising	4	10	5	18	46	21	1	100	191
Conventional	5	6	3	11	20	59	1	101	94
Realistic	6	20	0	20	0	20	40	100	5

N = 1,699 Hit Rate is 62%

Occupation upon College Graduation		Curricular Major upon Leaving College							
		1	2	3	4	5	6	PC	N
Investigative	1	95	1	3	1	1	0	101	357
Artistic	2	4	85	8	2	0	1	100	101
Social	3	11	10	77	2	0	0	100	547
Enterprising	4	13	5	9	65	8	1	101	228
Conventional	5	9	8	14	10	59	0	100	217
Realistic	6	26	0	26	9	4	35	100	23

N = 1,473 Hit Rate is 77%

TABLE 2

Relation between Income of Family Origin, Reported at Time of College Admission, vs. Income after College and Anticipated Income

Student Family Income Reported at Time of Admission	Income after College											
	Student Income Only	Less than $5,000	$5,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-19,999	$20,000-24,999	$25,000 and over	Conf.	None or Don't Know	PC	N
Less than $5,000	12	18	31	18	9	0	0	0	1	12	101	189
$5,000-$7,499	13	18	22	21	12	1	0	0	1	11	99	394
$7,500-9,999	16	16	26	20	10	1	0	0	1	10	100	311
$10,000-14,999	17	13	27	19	12	0	0	0	1	9	98	355
$15,000-19,999	18	20	20	18	8	0	0	0	3	13	100	110
$20,000-24,999	15	19	23	23	12	0	0	0	0	9	101	69
$25,000 and over	12	24	18	14	14	2	0	4	6	6	100	50
Confidential	16	16	25	23	6	1	0	0	3	11	101	97
Don't know	8	16	28	25	7	0	0	0	1	15	100	632

N = 2,207

Student Family Income Reported at Time of Admission		Median Anticipated Income[a]	Difference between Parents' Family Income and Own Anticipated Income	Anticipated Income Intervals									
(Interval)	(Median)			Less than $5,000	$5,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-19,999	$20,000-24,999	$25,000-and over	Conf., None, or Don't Know	PC	N
Less than $5,000	$ 2,500	$13,700	$11,200	2	2	15	27	19	7	5	24	101	189
$5,000-7,499	6,250	15,278	9,028	2	3	11	21	18	11	9	26	101	392
$7,500-9,999	8,750	15,719	7,039	1	3	10	22	19	10	11	24	100	310
$10,000-14,999	12,500	15,882	3,382	1	3	8	22	17	9	12	28	100	356
$15,000-19,999	17,500	17,000	(500)[b]	2	0	9	19	10	10	17	35	102	113
$20,000-24,999	22,500	20,556	56	2	4	9	7	15	18	21	25	101	68
$25,000 and over		22,000		4	2	8	4	8	15	21	38	100	48
Confidential				0	3	5	21	16	8	13	33	99	99
Don't know				2	4	11	23	11	5	6	39	101	633

N = 2,208

[a]For those who reported.

[b]Parentheses indicate negatives.

income, as related to parents' family income, provide an indication of effect of college on earnings, if it can be assumed the difference between family income and anticipated income is an outcome of college. These figures suggest that, except for those from high-income families ($15,000 or more), most college graduates expect to earn more than their parents. Those from low income families anticipate substantially higher earnings. For all family incomes up to $25,000, the average person who leaves college expects, within 10 years, to be earning $6,205 more annually than does his or her family. (This figure is based on arithmetic using medians and excluding those who at admission or when surveyed did not know their family's or their income, had none, or considered it confidential.)[2] It appears that especially for young people from low- and middle-income families, college attendance continues to be a means to improve economic situation.

In order to consider other admissions variables that might be related to income after college and to anticipated income, a multiple correlation analysis was conducted using these dependent variables and considering all of the admissions variables. The first admissions variable to enter the analysis was the one that had the highest correlation with the dependent variable; the second admissions variable to enter had the highest correlation with the dependent variable after the first variable had been partialled out. This was repeated for the third and subsequent variables, until the Multiple R stopped increasing by at least .01. This indicated the analysis had reached (or probably passed) the point of diminishing returns by adding admissions variables.

Results of the multiple correlation analysis are reported in Table 3. In the analysis of income after college, ACT Composite and Science non-academic accomplishments enter the equation first and second, respectively, and both have positive, though small, simple correlations with the dependent variable. The other three admissions variables have small negative simple correlations with income after college, though each does add somewhat to the Multiple R (which is read cumulatively going down). Taken together, the five admissions variables correlate only .21 with income after college, indicating only a small relationship.

The analysis of anticipated income shows family income and educational aspiration to enter the equation first and second, respectively. Though these admissions variables did not enter the equation at all for the previous analysis, they had the highest correlations of the admissions variables with anticipated income. If anticipated income is assumed to be a reasonable indication of future income, it appears that it may take as long as several years for family income and educational aspiration to play a potent role in influencing income. This is a reasonable assumption, because, for example, educational aspiration would have to be translated into educational attainment in order to influence income. Similarly, in order to be decisive, the in-

TABLE 3

Multiple Correlation Analysis of Admissions Variables vs. Income after College and Anticipated Income

	Income after College		
Admissions Variables	Multiple R	R^2	Simple r
ACT Composite	.11	.01	.11
Science Accomplishments	.14	.02	.10
Drama Accomplishments	.18	.03	-.09
Music Accomplishments	.20	.04	-.07
Factor 4, Social Emphasis in College Choice	.21	.04	-.07

N = 590

	Anticipated Income		
Admissions Variables	Multiple R	R^2	Simple r
Family Income	.17	.03	.17
Educational Aspiration	.22	.05	.16
Factor 2, Practical Emphasis in College Choice	.25	.06	-.16
Music Accomplishments	.28	.08	-.12
ACT Composite	.29	.08	.11
High School Average	.31	.10	-.08
Writing Accomplishments	.32	.10	-.08

N = 590

[2]This survey was made before the marked inflation of the past year. Hence the anticipated incomes can be considered as "real" dollars.

fluence of family income probably must be pervasive in subtle ways and cumulative over a period of years. Taken together, the seven admissions variables correlate .32 with anticipated income, a result which indicates a small-to-medium relationship. No single admissions variable correlates highly enough with either income after college or anticipated income to make it a useful prognosticator.

Educational Attainment, Aspiration, and Activity

Educational aspiration is the admissions item most likely to be related to educational attainment, aspiration, and activity. Cross tabulations showing these relationships are reported in Table 4. Educational aspiration at time of admission does not seem to have had a great impact on level of education attained. Most students received a baccalaureate no matter what their aspirations were. However, the survey took place only two years after college graduation, too soon for these people to have earned advanced graduate or professional degrees. The table does show that students who as freshmen aspired to graduate with degrees were much more likely to have attained them than students who did not so aspire.

The midsection of Table 4 relates educational aspiration at admission to educational aspiration after college. Generally this table documents a warm-up effect of college; that is, students raised their level of educational aspiration after their college experience. For example, of the students who at admission aspired only to a baccalaureate, after college, 51% aspired to 1-2 years of graduate work and 7% to a PhD.

The bottom section of Table 4 relates educational aspiration at admission to current educational activity (i.e., coursework then being undertaken). The column "Coursework More than Half-Time," which describes people who continued to be full-time students, shows that this percentage increased with higher educational aspirations at admissions.

As with the analysis of income, it seemed desirable to use multiple correlation with Persistence to a Baccalaureate, Educational Aspiration after College, and Current Educational Activity, in turn as dependent variables, and to use the admissions variables as independent variables. The same procedure for variable selection previously described was employed.

Results are reported in Table 5. The analysis of Persistence to a Baccalaureate shows High School Average, Family (or parents') Income, and ACT Composite to be variables one, two, and three, respectively, into the equation. High School Average and the ACT Composite represent educational development, a factor that might be expected to relate to persistence. Family income, as one indicator of socioeconomic status, has been found to be related to college attendance and graduation (Eckland, 1964, and Sewell & Shah, 1967). Educational Aspiration and Writing Accomplishments had very small negative simple correlations with persistence, though each did add slightly to the final Multiple R of .31. This R indicated that there was a small-to-medium correlation between the admissions variables and persistence. Judging from these results, the two preferred indicators for practical use would be High School Average and the ACT Composite. This analysis was performed on combined students for the three colleges. Substantial mean differences among these colleges in both the dependent and independent variables would be expected. If analyses were conducted on a college-by-college basis, such differences would produce lower correlations. For this reason, the Multiple R of .31 is something of an underestimate; within-college relationships should also be examined.

The analysis of Educational Aspiration after College is reported in the midsection of Table 5. The admissions variables related to educational aspiration or highest degree sought when students were surveyed after college were the ACT Composite, High School Average, and Educational Aspiration. This appears to be reasonable. Taking them together, the Multiple R is .27, again indicating a small-to-medium relationship.

The analysis of Current Educational Activity is reported at the bottom of Table 5. Logically enough, the first two admissions variables to enter the equation were Educational Aspiration and ACT Composite, in that order. The Multiple R, taking all six variables into account, is only .22, indicating a small relationship.

Besides the problem of combining colleges when there are appreciable mean differences on variables of interest, a problem in the analysis of persistence to which reference has already been made, another factor frequently complicates relationships. College Grade Point Average (GPA) is itself moderately to highly correlated with persistence. In fact many students who drop out are in academic difficulty and are earning low college grades. We can ask, which admissions variables are independent of the academic ones of college GPA, and yet are related to persistence?

TABLE 4

Relation between Educational Aspiration at Time of College Admissions vs. Level of Education Attained, Educational Aspiration after College, and Current Educational Activity

Level of Education Attained

Educational Aspiration at Time of Admissions	No College Degree	Associate Degree	BA or Equiv.	Graduate Degree	PC	N
High School Diploma	33	33	33	0	99	3
Some College	36	2	61	2	101	124
BA or Equivalent	23	2	70	4	99	1,037
1-2 Years Graduate	18	3	69	10	100	574
PhD	27	3	65	5	100	112
MD	20	2	70	7	99	167
DDS	16	0	76	9	101	58
LLB	19	1	73	7	100	104
BD	0	0	83	17	100	6
Other	33	4	58	4	99	24

N = 2,209

Educational Aspiration after College

Educational Aspiration at Time of Admissions	No Degree	Associate	BA	1-2 Years Graduate	PhD/Other Advanced Degree	PC	N
High School Diploma	0	33	67	0	0	100	3
Some College	16	5	35	43	2	101	121
BA or Equivalent	7	2	33	51	7	100	1,036
1-2 Years Graduate	7	0	20	52	21	100	568
PhD	7	1	14	39	40	101	106
MD	6	2	14	32	46	100	167
DDS	4	0	13	43	41	101	56
LLB	8	1	15	21	55	100	104
BD	20	0	20	40	20	100	5
Other	14	5	41	23	18	101	22

N = 2,188

Current Educational Activity

Educational Aspiration at Time of Admissions	Taking No Courses Now	Taking Courses but Not for Credit	Going Evenings/ Saturdays	Coursework Less than Half-Time	Coursework More than Half-Time	PC	N
High School Diploma	67	0	33	0	0	100	3
Some College	81	2	6	1	11	101	124
BA or Equivalent	73	3	8	2	14	100	1,039
1-2 Years Graduate	62	4	9	2	23	100	571
PhD	46	2	9	5	39	101	111
MD	43	1	7	1	49	101	169
DDS	35	4	9	2	51	101	57
LLB	54	1	7	0	38	100	105
BD	50	0	0	17	33	100	6
Other	63	4	8	4	21	100	24

N = 2,209

Analyses reported in Table 6 are designed to address this question. The four variables the previous analysis had shown to be pertinent were used here. Analyses were run on each of the three institutions; results are reported for the institution showing overall Rs in the middle range. Because Table 6 presents statistics for a single institution, institutional differences do not affect interpretation of the results.

High School Average, Educational Aspiration, and the ACT Composite are moderately correlated with College GPA at this institution. At the same time, Educational Aspiration and High School Average are likewise moderately correlated with Persistence. When College GPA is partialled out, Educational Aspiration alone has a substantial correlation with Persistence. High School Average operates on Persistence primarily through College GPA. On the other hand, Educational Aspiration is relatively independent of College GPA in its relation to Persistence.

TABLE 5

Multiple Correlation Analysis of Admissions Variables vs. Persistence to a Baccalaureate, Educational Aspiration after College, and Current Educational Activity

Persistence to a Baccalaureate

Admissions Variables	Multiple R	R^2	Simple r
High School Average	.27	.07	.27
Family Income	.28	.08	.05
ACT Composite	.29	.09	.18
Educational Aspiration	.30	.09	-.03
Writing Accomplishments	.31	.09	-.03

N = 2,209

Educational Aspiration after College

Admissions Variables	Multiple R	R^2	Simple r
ACT Composite	.21	.05	.21
High School Average	.25	.06	.20
Educational Aspiration	.27	.07	.14

N = 2,188

Current Educational Activity

Admissions Variables	Multiple R	R^2	Simple r
Educational Aspiration	.15	.02	.15
ACT Composite	.17	.03	.12
High School Average	.19	.04	-.03
Science Accomplishments	.20	.04	.05
Drama Accomplishments	.21	.04	-.09
Writing Accomplishments	.22	.05	-.06

N = 2,209

TABLE 6

Correlation Analysis of Admissions Variables vs. College GPA, Persistence, and Persistence with College GPA Partialled Out

Admissions Variables	College GPA	Persistence to a Baccalaureate	Persistence with College GPA Partialled Out
ACT Composite	.37	.11	.03
High School Average	.52	.29	.11
Family Income	.03	.06	.05
Educational Aspiration	.41	.50	.39
(Multiple R all four above)	.61	.54	.41

N = 761

Note. Correlation between College GPA and Persistence is .40.

Conclusions

The following assumptions about a social audit of colleges seem reasonable. A college's first responsibility is the development of its students. By following up on its graduates, a college can assess this development in a number of different ways, including studying career behavior, income, and

educational behavior. Student development is best studied in the context of student plans and other student characteristics at college admission. Without such a context, for example, it would be possible to label as dropouts students who never intended to complete a degree.

Colleges like to answer the question "How are we doing?" by comparing themselves to other colleges. They do this now with respect to enrollments and funding level, and might also do so in the area of student development. The analogy to corporate annual reports and social audits is instructive here. Corporate performance on an annual basis over the last 10 years may well be compared in the annual report for both the financial and social audit. Interested parties can discern whether a company is improving or getting worse and, if so, where. If the financial and social audit are combined, we can add the question "At what cost?" An industry analyst, one who looks at all firms in one industry, might compare the audits of oil companies, for example. If college and university social audits were made public, a student of higher education might examine community colleges.

But colleges need not compare themselves with other colleges, at least while they are exploring the possibilities of considering student development in terms of college outcomes. It would be helpful first of all to consider what outcomes can readily be assessed and what relationships with student admissions data can be determined. In this study, we have examined some obvious outcomes that the general public can easily understand. In so doing, we have demonstrated that these outcomes can be easily assessed and are related in logical ways to student characteristics at admission. Further, the results suggest what colleges might expect to find should they develop similar social audits of themselves.

To present an example of a social audit of a college, we combined student data for three institutions, and drew a number of conclusions about student development and college outcomes. The major conclusions, by outcome area, are listed below.

Career Behavior

1. Curricular major upon leaving college is definitely related to intended major at admissions. Sixty-two percent of students left college with the curricular major they selected at entrance or with a related one.
2. Occupation upon leaving college is also related to vocational choice at admission. Fifty-seven percent of students entered an occupation related to the vocational choice indicated at college entrance.
3. Occupation upon leaving college is closely associated with curricular major. Seventy-seven percent of students entered an occupation related to their curricular major upon leaving college.

Income

1. Right after college, students all tend to earn about the same income, in the $5,000-7,499 range, regardless of their parents' income.
2. Income students anticipate in 10 years varies with parents' income. Students from high-income families expect high incomes.
3. On the whole, college graduates expect to earn incomes higher than their parents'. This is especially true for those whose parents have low incomes. Overall, the young people expect to earn over $6,000 more per year than their parents.
4. None of the admissions variables correlated highly with income right after college or anticipated income. The admissions variables most related to income right after college were ACT Composite and Science Accomplishments; those most related to anticipated income were Family Income and Educational Aspiration.

Educational Behavior

1. Most college students earn a baccalaureate, whatever their educational aspirations are at admissions. Seventy-four percent of those who aspire to a baccalaureate get one. Those who as incoming freshmen aspire to graduate degrees are more likely to earn them than students who do not aspire to them.
2. College causes students to raise their level of educational aspiration. After college, students tend to aspire to a higher degree than they did at college entrance.
3. Educational aspiration at admission is related to taking coursework half time or more after college. Students aspiring to graduate and professional degrees are much more likely to be working toward these degrees than others.

4. None of the admissions variables correlated highly with educational behavior when the three colleges were combined. Those related to Persistence to a baccalaureate were High School Average, Family Income, and ACT Composite; to Educational Aspiration after College were ACT Composite, High School Average, and Educational Aspiration; and to Educational Activity after College were Educational Aspiration, ACT Composite, and High School Average.

5. Analyses at one college showed High School Average, Educational Aspiration, and the ACT Composite to be moderately to highly correlated with College GPA and Persistence to a baccalaureate. Educational Aspiration was moderately related to Persistence independent of College GPA, while High School Average and the ACT Composite were related to Persistence primarily through College GPA.

REFERENCES

Abt Associates. *Abt Associates, Inc., Annual Report and Social Audit 1973.*

The American College Testing Program. *ACT Technical Report.* Iowa City, Iowa: Author, 1972.

Carmody, J. F., Fenske, R. H., & Scott, C. S. *Changes in goals, plans, and background characteristics of college-bound high school students.* ACT Research Report No. 52. Iowa City, Iowa: The American College Testing Program, 1972.

Eckland, B. K. Social class and college graduation: Some misconceptions corrected. *American Journal of Sociology,* 1964, **70**, 36-50.

Holland, J. L., & Whitney, D. R. *Changes in the vocational plans of college students: Orderly or random?* ACT Research Report No. 25. Iowa City, Iowa: The American College Testing Program, 1968.

Holland, J. L., Whitney, D. R., Cole, N. S., & Richards, J. M., Jr. *An empirical occupational classification derived from a theory of personality and intended for practice and research.* ACT Research Report No. 29. Iowa City, Iowa: The American College Testing Program, 1969.

Hunt, S. M. Conducting a social inventory. *Management Accounting,* 1974, 15-26.

Munday, L. A., & Davis, J. C. *Varieties of accomplishment after college: Perspectives on the meaning of academic talent.* ACT Research Report No. 62. Iowa City, Iowa: The American College Testing Program, 1974.

Richards, J. M., Jr., & Holland, J. L. A factor analysis of student "explanations" of their choice of a college. ACT Research Report No. 8. Iowa City, Iowa: The American College Testing Program, 1965.

Sewell, W. H., & Shah, V. P. Socioeconomic status, intelligence, and the attainment of higher education. *Sociology of Education,* 1967, **40**, 1-23.

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